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This listing of claims will replace all prior versions of claims in the application.

## Claims 1-40. (cancelled)

Claim 41. (currently amended) A photoresist comprising a photoactive component and a polymer comprising a lactone moiety provided by polymerization of a monomer having a ring oxygen adjacent to a vinyl group a monomer chosen from among:

Claim 43. (previously presented) The photoresist composition of claim 41 wherein the polymer comprises photoacid-labile groups.

Claim 44. (previously presented) The photoresist composition of claim 41 wherein the polymer further comprises a carbon alicyclic group fused to the polymer backbone.

Claim 45. (previously presented) The photoresist composition of claim 44 wherein the carbon alicyclic group is a polymerized norbornene group.

Claim 46. (previously presented) The photoresist composition of claim 41 wherein the polymer comprises a heteroalicyclic group distinct from and in addition to the lactone moiety.

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- Claim 47. (previously presented) The photoresist composition of claim 46 wherein the additional heteroalicyclic group comprises an oxygen ring member and/or a sulfur ring member.
- Claim 48. (previously presented) The photoresist composition of claim 46 wherein the additional heteroalicyclic group has a non-hydrogen ring substituent.
- Claim 49. (previously presented) The photoresist composition of claim 41 wherein the polymer comprises a polymerized acrylate that comprises a photoacid-labile moiety.
- Claim 50. (previously presented) The photoresist composition of claim 41 wherein the polymer further comprises anhydride units.
- Claim 51. (previously presented) The photoresist composition of claim 41 wherein the polymer is a terpolymer.
- Claim 52. (previously presented) The photoresist composition of claim 41 wherein the polymer is a tetrapolymer.
- Claim 53. (previously presented) The photoresist composition of claim 41 wherein the polymer is at least substantially free of aromatic groups.
- Claim 54. (previously presented) The photoresist composition of claim 41 wherein the polymer is completely free of aromatic groups.
- Claim 55. (previously presented) The photoresist composition of claim 41 wherein the photoactive component comprises one or more photoacid generator compounds.

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- Claim 56. (previously presented) The photoresist composition of claim 41 wherein the photoresist is a chemically-amplified positive-acting resist.
- Claim 57. (previously presented) A method of forming a positive photoresist relief image, comprising:
  - (a) applying a coating layer of a photoresist of claim 41 on a substrate; and
  - (b) exposing and developing the photoresist layer to yield a relief image.
- Claim 58. (previously presented) The method of claim 57 wherein the photoresist layer is exposed with radiation having a wavelength of less than about 200 nm.
- Claim 59. An article of manufacture comprising a microelectronic wafer substrate having coated thereon a layer of the photoresist composition of claim 41.